# TechPaths
## A Curriculum Mapping System

# Landscape Map

**Teacher:** Irene Lee
**Course:** Math Grade 3
**Year:** 2004-2005
**Month:** September

| Unit Name | Essential Questions | Content | Skills | Assessments | Lessons | Standards |
|---|---|---|---|---|---|---|
| **Flips, Turns, and Area** | | | | | | |
| | | -A: Tetrominoes | -A1: Measure area by covering a flat space with square units. | -A-1.What's an -Omino? (individual & group demonstration & application) | | -MA.03.G.01.01 ~ Geometry ~ Use deductive and inductive reasoning to recognize and apply properties of geometric figures. ~ Students are able to recognize and compare the following plane and solid geometric figures: square, rectangle, triangle, cube, sphere, and cylinder. |
| | | -B: Slides, Flips, and Turns | -B1: Systematically find all possible geometric arrangements of a given number of squares. | -A-2: How many squares? (individual & group demonstration & application) | | -MA.03.G.02.01.a ~ Geometry ~ Use properties of geometric figures to solve problems from a variety of perspectives. ~ Students are able to demonstrate relationships between figures using similarity and congruence. ~ Identify a line of symmetry in circles, squares, and rectangles. |
| | | -C: Rectangles & triangles with different dimensions | -B2: Compare congruency of shapes by appearance.<br>-C1: Find patterns for covering a space.<br>-C-2: Compare congruency using geometric motion. | -B-1: Predicting Motions (Games)<br><br>-B-2: Puzzle Pieces (in-class observation)<br>-C: Comparing Tetromino Shapes (individual & group demonstration & application) | | |
| **Finding Area** | | | | | | |
| | | -D: Triangles, Squares, & Rectangles | -D: Measure area of rectangles and triangles. | -D-1: Changing the rectangle's shape (individual & group demonstration & application) | | -MA.03.G.01.01 ~ Geometry ~ Use deductive and inductive reasoning to recognize and apply properties of geometric figures. ~ Students are able to recognize and compare the following plane and solid geometric figures: square, rectangle, triangle, cube, sphere, and cylinder. |

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| **Finding Area** | | -E. Rectangles, Squares, and Triangles | -E: Compare congruency of area of different shapes. | -D-2: Counting area in squares on a 10x12 rectangle (individual & group demonstration & application)<br><br>-E: Identify area of complex shape. (individual & group demonstration & application) | | -MA.03.G.02.01.a ~ Geometry ~ Use properties of geometric figures to solve problems from a variety of perspectives. ~ Students are able to demonstrate relationships between figures using similarity and congruence. ~ Identify a line of symmetry in circles, squares, and rectangles. |
| **Time** | | -F: Analog time | -F: Identify time to the nearest half hour. | -F-H Daily Practice (Skillsheet) | | -MA.03.M.01.01 ~ Measurement ~ Apply measurement concepts in practical applications. ~ Students are able to read and tell time before and after the hour within five-minute intervals on an analog clock. |
| **Identifying and continuing number patterns** | | -G: Number patterns | -G: Identify and expand upon various number patterns. | | | -MA.03.N.01.02 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to find multiples of whole numbers 2, 5, and 10. |
| **Measuring to the nearest inch or centimeter.** | | -H: Measurements to the nearest inch | -H: Identify width and length, measuring to the nearest inch or nearest centimeter. | | | -MA.03.A.04.01 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to extend linear patterns. |

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|---|---|---|---|---|---|---|
| **Measuring to the nearest inch or centimeter.** | | | | | | -MA.03.A.04.02 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to use number patterns and relationships to learn basic facts. |

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|---|---|---|---|---|---|---|
| **Addition & Subtraction Strategies** | | | | | | |
| | | -A. Combinations that make Ten: 1-9 | -A1. Explored, developed, and utilized addition strategies, including known combinations to help learn other combinations. | -A1. Combinations of Ten Performance Task (individual & group demonstration & application) | | -MA.03.A.02.02.a ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Use concrete materials to model and solve equations (hands-on). |
| | | -B. Doubles & Halves: 0-10 | -B1. Explored and determined which numbers (0-10) can be divided evenly. | -B1. Even or Not? Performance Task (individual & group demonstration & application) | | -MA.03.A.04.02 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to use number patterns and relationships to learn basic facts. |
| **Things In Groups (Cont. in Nov.)** | | | | | | |
| | | -C. Groups: Multiple Sets 0-12 | -C1. Found groups of things in natural and manipulative environments wherein multiple sets were defined. | -C1-C3. Multiplication Performance Task (individual & group demonstration & application) | | -MA.03.A.01.01 ~ Algebra ~ Use procedures to transform algebraic expressions. ~ Students are able to explain the relationship between repeated addition and multiplication. |
| | | -D. Multiples: 1-12 | -C2. Solved two-step word problems (facts 1-12). | -D1. Multiples Charts Performace Task (Models) | | -MA.03.N.01.02 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to find multiples of whole numbers 2, 5, and 10. |
| | | | -C3. Wrote self-generated multliplication word problems. -D1. Skip counted by 2s, 3s, 4s, and 6s and refered to the number sequences as multiples. | | | |

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| Unit Name | Essential Questions | Content | Skills | Assessments | Lessons | Standards |
|---|---|---|---|---|---|---|
| **Comparing & Ordering (Cont. in Nov.)** | | -E. Two-Digit Numbers: 10-99 | -E1. Listed numbers in order from least to greatest & greatest to least. | -E1. No Formal Assessment at this time (Teacher observation and evaluation) | | -MA.03.N.01.01 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to place in order and compare whole numbers less than 10,000, using appropriate words and symbols. |
| **Money Value (Cont. in Nov.)** | | -F. Coin Value: Penny, Nickel, Dime, Quarter | -F1. Counted mixed-coin sets to find cumulative values. | -F1. No Formal Assessment at this time (Teacher observation and evaluation) | | -MA.03.M.01.02 ~ Measurement ~ Apply measurement concepts in practical applications. ~ Students are able to count, compare, and solve problems using a collection of coins and bills. |

**Teacher:** **Irene Lee**
**Course:** **Math Grade 3**
**Year:** **2004-2005**
**Month:** **November**

| Unit Name | Essential Questions | Content | Skills | Assessments | Lessons | Standards |
|---|---|---|---|---|---|---|
| **Things in Groups continued from Oct.** | | | | | | |
| | | -A. Multiples | -A Using multiples to solve multiplication problems | -A-B Single Digit Multiplication Problems (Skillsheet) | | -MA.03.A.01.02 ~ Algebra ~ Use procedures to transform algebraic expressions. ~ Students are able to identify special properties of 0 and 1 with respect to arithmetic operations (addition, subtraction, multiplication). |
| | | -B. Arrays | -B-1. Using arrays to solve multiplication problems | | | -MA.03.A.02.02.a ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Use concrete materials to model and solve equations (hands-on). |
| | | | -B-2 Factoring using arrays (cont. in Dec.) | | | -MA.03.A.04.02 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to use number patterns and relationships to learn basic facts. -MA.03.N.01.02 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to find multiples of whole numbers 2, 5, and 10. |
| **Money Value** | | | | | | |
| | | -C. Coin Value | -A. Counting value of mixed coins | -A. Counting Coins (individual & group demonstration & application) | | -MA.03.M.01.02 ~ Measurement ~ Apply measurement concepts in practical applications. ~ Students are able to count, compare, and solve problems using a collection of coins and bills. |

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|---|---|---|---|---|---|---|
| **Time** | | | | | | |
| | | -C. AnalogTime | -C-1Tell time by 5 minute intervals | -Daily Practice (individual & group demonstration & application) | | -MA.03.M.01.01 ~ Measurement ~ Apply measurement concepts in practical applications. ~ Students are able to read and tell time before and after the hour within five-minute intervals on an analog clock. |
| | | | -C-2 Tell time to the minute | | | |
| **Temperature** | | | | | | |
| | | -D. Temperature (continue in Dec.) | -D Read temperature to the nearest degree | | | -MA.03.M.01.03 ~ Measurement ~ Apply measurement concepts in practical applications. ~ Students are able to identify U.S. Customary units of length (feet), weight (pounds), and capacity (gallons). -MA.03.M.01.04 ~ Measurement ~ Apply measurement concepts in practical applications. ~ Students are able to select appropriate units to measure length (inch, foot, mile, yard); weight (ounces, pounds, tons); and capacity (cups, pints, quarts, gallons). |
| **Line Segments** | | | | | | |
| | | -E. Congruent Line Segments | -E. Measure line segments & draw congruent ones.(continued in Dec.) | | | |

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| Unit Name | Essential Questions | Content | Skills | Assessments | Lessons | Standards |
|---|---|---|---|---|---|---|
| **Things in Groups (cont. from Nov.)** | | | | | | |
| | | -C. Story Problems | -A-1. Choose whether multiplication or division is needed to solve a problem. | -A-C. Things in Groups (includes skills taught Oct. - Dec.) (Test) | | -MA.03.A.03.01 ~ Algebra ~ Interpret and develop mathematical models. ~ Students are able to use the relationship between multiplication and division to compute and check results. |
| | | -A. Multiply or Divide? | -B-1. Solve problems using multiples or factors. | | | -MA.03.A.04.01 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to extend linear patterns. |
| | | -B. Problem - solving | -C-1. Create story problems to solve using multiplication or division. | | | -MA.03.A.04.02 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to use number patterns and relationships to learn basic facts. |
| | | -D. Ordinal numbers | -D-1. Identify an ordinal postition in a pattern. | | | -MA.03.N.01.02 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to find multiples of whole numbers 2, 5, and 10. |
| | | -E. Temperature | -E-1. Tell temperature to the degree, negative or positive. | | | -MA.03.N.03.01 ~ Number Sense ~ Develop conjectures, predictions, or estimations to solve problems and verify or justify the results. ~ Students are able to round two-digit whole numbers to the nearest tens, and three-digit whole numbers to the nearest hundreds. |
| | | -F. Rounding | -F-1. Rounded numbers to the nearest 10. | | | |

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**Month:** January

| Unit Name | Essential Questions | Content | Skills | Assessments | Lessons | Standards |
|---|---|---|---|---|---|---|
| **Landmarks in the Hundreds** | | -A. Factors of 20, 24, 36, and 48, | -A1. Skip count to find factors of 20, 24, 36, & 48 | -A. Factors of 24, 36, & 48 (individual & group demonstration & application) | | -MA.03.A.01.02 ~ Algebra ~ Use procedures to transform algebraic expressions. ~ Students are able to identify special properties of 0 and 1 with respect to arithmetic operations (addition, subtraction, multiplication). |
| | | -B. Factors of 100 | -B1. Use groups of factors to make pictures, or items totaling 100 | -B1-2. Identifying amounts of groups of coins in landmark numbers up to $10 (Abstracts) | | -MA.03.A.04.01 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to extend linear patterns. |
| | | -C. Landmarks in the Hundreds | -B2. Divided (skip counted) a dollar using coins as factors of 100 | -A-E. Factors and multiples of landmark numbers (Abstracts) | | -MA.03.A.04.02 ~ Algebra ~ Describe and use properties and behaviors of relations, functions and inverses. ~ Students are able to use number patterns and relationships to learn basic facts. |
| | | -D. Real-World Multiplying and Dividing | -C1. Used various known factors of 100 to identify factors of landmark numbers such as 300 & 500, through use of 300 charts or manipulatives | | | |
| | | -E. 1000 Chart | -C2. Solving multiplication/division problems using money as landmark manipulatives<br>-D. Solved standard notation multiplication and division<br>-E. Construct a 1000 chart using landmark factors such as 20 or 50 | | | |

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|---|---|---|---|---|---|---|
| **Graphing** | | | | | | |
| | | -F. Bar graphs, line graphs, plot graphs, and pictographs | -F1. Intrepreted information taken from various types of graphs | -F. Interpreting and making graphs (individual & group demonstration & application) | | -MA.03.S.01.01 ~ Statistics and Probability ~ Use statistical models to gather, analyze, and display data to draw conclusions. ~ Students are able to ask and answer questions from data represented in bar graphs, pictographs and tally charts. |
| | | | -F2. Made various types of graphs using collected information | | | -MA.03.S.01.02 ~ Statistics and Probability ~ Use statistical models to gather, analyze, and display data to draw conclusions. ~ Students are able to gather data and use the information to complete a scaled and labeled graph. |
| **Addition/subtraction** | | | | | | |
| | | -G. Double-digit addition and subtraction | -G. Solve double-digit addition and subtraction (no borrowing) | -no assessment at this time (in-class observation) | | -MA.03.A.02.02.a ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Use concrete materials to model and solve equations (hands-on). -MA.03.A.02.02.b ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Represent given problem situations using diagrams, models, and symbolic expressions. |

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|---|---|---|---|---|---|---|
| **Place value** | | | | | | |
| | | -H. Place Value through hundreds | -H1. Identify place value of digits in numbers through hundreds | -Morning math (Constructed Response test) | | -MA.03.N.01.01 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to place in order and compare whole numbers less than 10,000, using appropriate words and symbols. |
| | | | -H2. Identify place value of digits in numbers through the hundreds | | | |

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|---|---|---|---|---|---|---|
| **Landmarks in the Hundreds** | | | | | | |
| | | -A. 1000 Chart | -A. Finding differences in the 100's between numbers on 1000 chart | -A. Landmarks in the Hundreds (Performance Observation) | | -MA.03.A.02.02.b ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Represent given problem situations using diagrams, models, and symbolic expressions. |
| **Combining & Comparing** | | | | | | |
| | | -A. Number data differences | -A1. Gather family sizes data & compare differences | | | -MA.03.A.01.02 ~ Algebra ~ Use procedures to transform algebraic expressions. ~ Students are able to identify special properties of 0 and 1 with respect to arithmetic operations (addition, subtraction, multiplication). |
| | | -B. Addition of double & triple digit numbers | -A2. Gather animal age data & compare differences | | | -MA.03.A.02.02.a ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Use concrete materials to model and solve equations (hands-on). |
| | | -C. Subtraction & addition | -A3. Gather weights of fruits hydrated & dehydrated, & figure differences between the two. | | | -MA.03.A.02.02.b ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to solve problems involving addition and subtraction of whole numbers. ~ Represent given problem situations using diagrams, models, and symbolic expressions. |
| | | | -B1. Adding double & triple digit numbers using heights & coupons | | | |

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| **Combining & Comparing** | | | -B2. Add amounts of times to equal a specific total time and write the corresponding time of the clock<br>-C Identify double digit addition and subtraction of numbers through the use of a 100 chart. | | | |
| **Place Value through ten thousands** | | -D. Place value through ten thousands | -D. Identifying value of digits through the ten thousands | | | -MA.03.N.01.01 ~ Number Sense ~ Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers. ~ Students are able to place in order and compare whole numbers less than 10,000, using appropriate words and symbols. |
| **Comparing & Ordering** | | -E. Number comparison | -E. Using =,<,or> to compare numbers | | | -MA.03.A.02.01 ~ Algebra ~ Use a variety of algebraic concepts and methods to solve equations and inequalities. ~ Students are able to select appropriate relational symbols (<, >, =) to compare numbers. |

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|---|---|---|---|---|---|---|
| **Geometric Shapes** | | -F. 3 Dimensional geometric shapes | -F. Identify various solid figures | -D-E. Math 4 Today quiz (Quiz) | | -MA.03.G.01.01 ~ Geometry ~ Use deductive and inductive reasoning to recognize and apply properties of geometric figures. ~ Students are able to recognize and compare the following plane and solid geometric figures: square, rectangle, triangle, cube, sphere, and cylinder. |